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ABSTRACT

The present interlibrary loan system will need to be better organized and expanded to include centralized regional centers in order to meet the increasing volume of requests. Presently about 70% of 10 million requests are being successfully filled within regional and local systems. Two major problems of the present system are (1) unequal distribution of lending and (2) difficulty filling incomplete and incorrect requests. These will be growing problems as the request rate doubles during this decade. Present regional systems, and current literature were studied, and persons involved in interlibrary loans were interviewed during this study. Recommended is a network to be funded by the Federal Government of regional bibliographic centers, resource centers and back-up centers centrally planned, but with a decentralized service program. Methodology and an outline for a cost study are included. (Author/DH)

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A FEASIBILITY STUDY OF CENTRALIZED AND REGIONALIZED INTERLIBRARY LOAN CENTERS

ED 076290

Prepared by
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to the

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FOREWORD

This report has been prepared by Professor Rolland E. Stevens at the request of the Association of Research Libraries. Members of the Advisory Committee, the ARL staff and others have contributed in various ways to the conduct of the study and the preparation of the report. The Association wishes to express its appreciation to Professor Stevens and to all who have assisted in this undertaking.

The conclusions and recommendations of the report are those of Professor Stevens. They do not necessarily represent the views of the Association of Research Libraries.

Stephen A. McCarthy
Executive Director
Association of Research Libraries

May 17, 1973

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Summary

The magnitude of interlibrary loan requests handled by all types of libraries in the United States is estimated at more than 10 million in 1972/1973 and nearly 18 million by 1979/1980.

The largest libraries lend much more than they borrow. Lending outside the state by the large academic library is more frequent than by other libraries.

Most frequently borrowed are items in English and those published in the last ten years. Books predominate in public library borrowing; academic libraries borrow other forms of material about as frequently as books; special libraries borrow predominantly serials.

The majority of requests are completed within local or intra-state regional systems, a large number of others are filled within the state, many of those remaining are filled within the multi-state region, so that only a fraction of all requests go outside the region.

Approximately 70% of requests are filled; 15% cannot be filled because the library receiving the request did not own the item, 10% because the item was lost, missing, at the bindery, in use, on reserve, or otherwise temporarily not available, and 5% because the item could not circulate.

The two major problems of the present system are (1) the unequal distribution of lending, with a few of the largest libraries handling a large proportion of the requests, and (2) the difficulty of filling requests which are incomplete, incorrect, or inadequately checked.

Solutions proposed for these two problems have been (1) compensation to the largest libraries for each transaction, and (2) better bibliographic checking of requests before they are forwarded to the lending library.

It is believed that the resources of American libraries are sufficient for the estimated magnitude of interlibrary loan in future years, if interlibrary loan is better organized to ensure (1) more adequate bibliographic checking of requests before they are forwarded to a potential lending library, (2) more even distribution of requests among lending libraries, and (3) compensation to libraries which receive large numbers of requests for the extra costs of providing this service.

It is recommended that a national system for interlibrary loan be established with strong central planning and coordination but a highly decentralized service program. The national system would comprise three types of centers for interlibrary loan:

(a) bibliographic centers to serve an area by verifying and forwarding requests originating in its area and not completed there,

(b) resource centers having strong collections in a number of subject fields to fill interlibrary loan requests which could not be filled in the local area, state, or multi-state region of the borrowing library and,

(c) back-up centers to fill requests which the resource centers were unable to fill.

It is recommended that the three kinds of centers named in the previous paragraph be established in existing libraries with appropriately strong collections.

Lastly, it is recommended that the costs of developing and maintaining this national system for interlibrary loan be the responsibility of the federal government.

Introduction

Borrowing manuscripts from one monastery by another was not uncommon in the middle ages, but in the modern sense interlibrary lending may be said to have a beginning in 1876, when the American Library Association was organized and many modern library services were first proposed. During the first quarter of the twentieth century, interlibrary lending was a seldom used service, but by mid-century it had grown substantially with no sign of slowing down. Statistics of interlibrary loans were collected only irregularly before 1962, but during the 1960's, the amount appeared to double about every four or five years. The volume of requests among public libraries, which has never been studied on a national basis, and the increasing liberalization of the restrictions on borrowing make any extrapolation of the future magnitude of requests problematical.

The growing burden of lending that has fallen on the largest libraries is well known; these libraries lend much more than they borrow. Professional concern about this imbalance has resulted in a number of studies on the subject.

The present study had its beginning in a report by Leslie Dunlap, prepared for the National Commission on Libraries and Information Science early in 1972, entitled "National and Regional Lending Libraries." Dunlap, a member of the Commission, suggested the creation of eight regional libraries, which would accept books no longer needed at public and state libraries in their regions and would serve as lending centers

to their regions for these books. As a backup for university interlibrary loan, he suggested a single national lending library, which similarly would accept books and journals no longer wanted by large university libraries, state libraries, and regional lending libraries. This new library would be a national lending facility for these materials.

After the discussion of his report the Commission let a contract to the Association of Research Libraries for the preparation of the present study, which has the following objectives:

1. To identify the major problems of the existing interlibrary loan system and recommend approaches to their solution.

2. To give the National Commission on Libraries and Information Science the background information necessary to a full-scale investigation of the development of a national center or a system of regional centers that would provide user access to library materials of all types not available locally.

The study was to include a review of the present interlibrary loan system and an evaluation of its effectiveness as a means of access to remote materials, an analysis and assessment of the viability of both a national center for interlibrary lending of all types of standard library materials and a system of regional centers for the same purpose, and an evaluation of the potential improvements in user access to remote materials provided by each alternative.

The specific tasks of the study were:

A. Review the current literature on this topic to assemble available viewpoints within and without the library profession.

B. From existing data, estimate the demand for interlibrary loans for the period 1975-1980.

C. Obtain from librarians data and opinions on a national center or a system of regional centers for interlibrary lending.

D. Prepare an outline and methodology for a cost study for initial development of a central library center and regional centers for interlibrary lending.

E. Establish and convene a professional committee to review recommendations and work on tasks A-D.

F. Prepare a report of the study made (A-D) and develop and support recommendations for action or further study.

The investigation and subsequent report are intended to assist the Commission members to decide whether to recommend a national center or regional centers for interlibrary lending, as one means of improving the interlibrary loan system.

In fulfilling the objectives and specified tasks of this project, the investigator has:

1. Read and analyzed the literature on interlibrary loan, with specific attention to publications of the past six or seven years and to writings on systems, networks, and other cooperative organizations of libraries for improvement of interlibrary loan.

2. Met with and interviewed persons involved daily in interlibrary loan in large research libraries, learning their practices, problems, and suggestions for improvement of interlibrary loan.

3. Met with members of the six-man advisory committee to this project, representing the viewpoints of libraries of different types and different sizes, obtaining their views on the most appropriate attack on interlibrary loan problems.

4. Visited several experimental and successful interlibrary loan networks (Columbus, Ohio; Albany, New York; Urbana, Illinois) in order to study problems and solutions (see Appendix C).

The Advisory Committee to Study Centralized and Regionalized Interlibrary Loan Centers named in task E was appointed by Mr. John P. McDonald, President of the Association of Research Libraries, on January 12, 1973. The following persons were appointed to the Committee:

Evan Farber, Librarian, Earlham College, Richmond, Indiana

Efren Gonzalez, Manager, Science Information Services, Bristol-Myers Products, Hillside, New Jersey

John A. Humphry, Assistant Commissioner for Libraries, New York State Library, State Education Department, Albany, New York

Alphonse F. Trezza, Director, Illinois State Library, Springfield, Illinois

Ralph Hopp, Director of Libraries, University of Minnesota, Minneapolis, Minnesota, Chairman

Leslie W. Dunlap, Dean of Library Administration, University of Iowa, Iowa City, Iowa, ex officio, Representative of the National Commission on Libraries and Information Science

The Advisory Committee met twice: at the Shoreham Hotel, Washington, D.C., on January 30, 1973, in order to review the problem, review findings to that time, and recommend future direction of the study; a second time, at the Dupont Plaza Hotel, Washington, D. C., March 5, 1973, to review the preliminary report of the study.

Assistance from Mr. Terry Weech and Miss Kathleen Bunting, both in the Graduate School of Library Science, University of Illinois, in the preparation of this report and of several earlier supplementary reports is gratefully acknowledged. Other persons who furnished information or helped in other ways in the preparation are named in Appendix C.

The first part of the report is a description of the present interlibrary loan system, its statistics, and its major characteristics. This descriptive part will be followed by several sections evaluating the present system and describing its major problems and previously suggested solutions for its improvement. The final part will consist of certain general statements and conclusions reached in the study and leading to the recommendations which, with the outline and methodology for a cost study for developing the centers, conclude the report.

Ideally the study was to cover all types of libraries and all types of library materials in interlibrary loan. The limited time available, however, has required the elimination of school libraries from the types of libraries and of audio-visual materials from types of materials.

Definitions of several terms as used in this report are given here. Since these terms are used in the literature in different senses, a definition of them as used here may be useful for reference.

Cycle-time. The time required at the lending library to respond to a request. It includes receipt of request, identifying, locating and recording the title wanted and dispatch of the item to the requesting library or responding that item is not available.

Interlibrary lending. The practice of lending books and other materials by one library to another.

Interlibrary loan. (1) Same as interlibrary lending. (2) The loan of a single title by one library to another.

Local System. The network of public libraries or of various types of libraries within a small geographical region for purposes of reciprocal lending and other cooperative services. It could include the libraries within a city, or in different but adjacent communities.

Pass or Passes. The activity of receiving and processing an interlibrary loan request by a potential lender. If the library that first receives the request supplies the item, it is one pass; if application must be made to two or more libraries, each attempt is a "pass."

Regional system. There are several kinds of regional systems. In this report, "intra-state regional system" will be used to designate the system of libraries within the state, and "multi-state regional system" to designate the libraries in adjoining states or adjoining parts of states, which contract for cooperative services, including interlibrary loan.

Request. A request by one library to borrow a single title from another library. If several titles are requested from the same library at the same time, there is one request for each title. Usually, but not necessarily, submitted on an A.L.A. Interlibrary Loan Request form (see p. 13), it may be sent directly to the library believed to own a copy or to a bibliographic center or other intermediary which is to forward it to the lending library. A "filled" request is the same as an interlibrary loan in its second sense. It is one that has been completed by the loan of the material or by a photocopy or microfilm of the material. An unfilled request is one that could not be supplied by the library approached.

Total Time. The time required both at the borrowing and lending library to effect an interlibrary loan. It includes every step from acceptance of the request from the user to the delivery of the requested item to the user, or response that item is not available.

Transaction. A request sent out whether filled or not; a request received, whether filled or not. If a request is filled by the first library to which it is sent, this is two transactions, one for the borrowing library, one for the lending library. If the same title must be sent to three libraries before it can be filled, this constitutes six transactions, three for the borrowing library and one for each potential lending library that handled it.

The Present Interlibrary Loan System

Interlibrary lending is the practice of lending books, journals, and other materials by one library to another library. It is not restricted to printed documents but may involve manuscripts, archives, films, maps, or any other kind of material which the library is prepared to lend. Because of time limitation for the present study, this report will be restricted to the loan of printed materials. All types of libraries are involved both as borrowers and as lenders. Limitations of time for this study also exclude consideration of school libraries, but public, academic, special, state, and government libraries, and library systems and networks are included.

The request by the borrowing library is supposed to fill an abnormal, temporary need. Material is usually loaned for the customary loan period with renewal privileges established by the lending library. An individual cannot borrow directly from a distant library on interlibrary

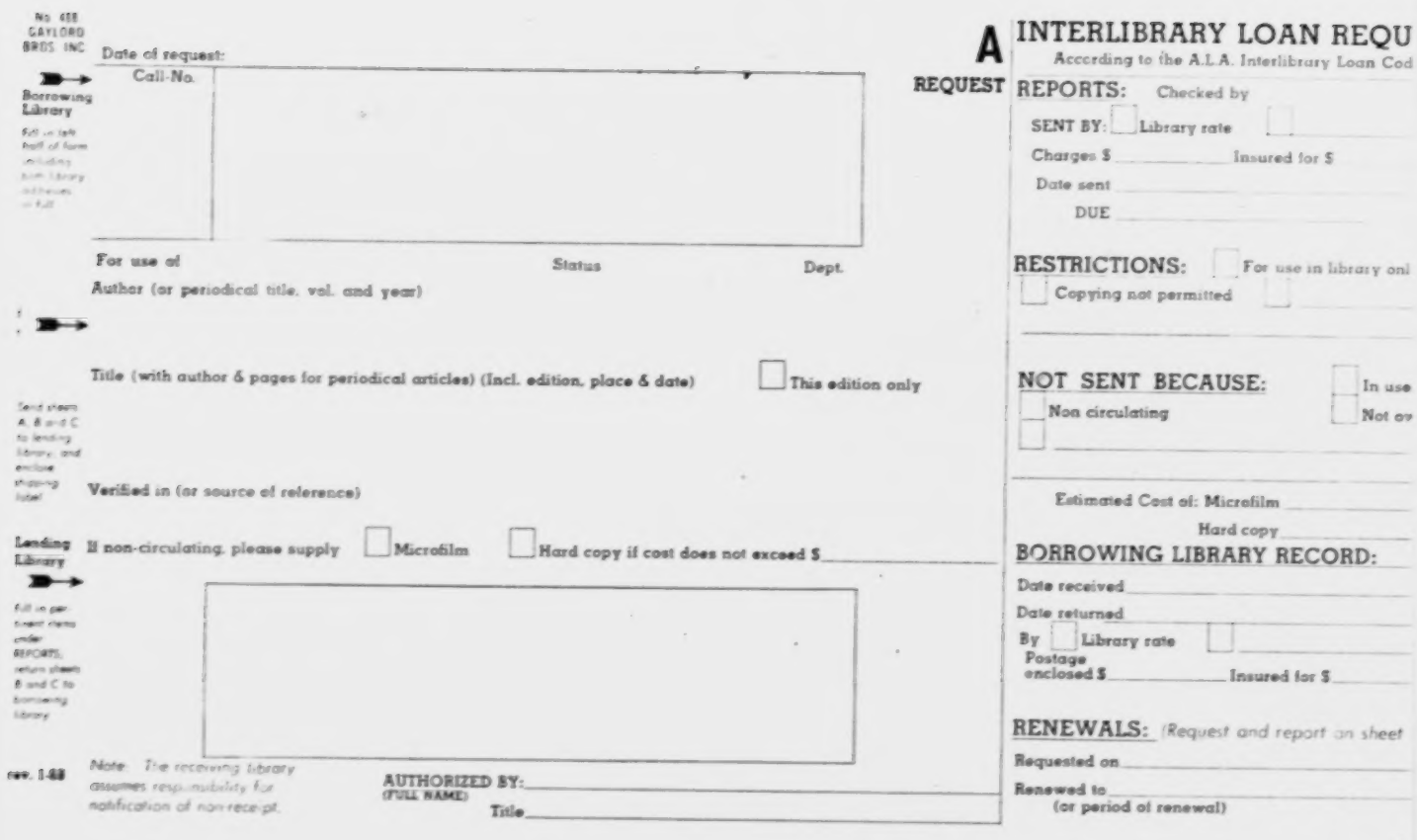
loan, but must have his local library negotiate the loan for him.

An early recognition of the need for a set of rules and a division of responsibility led to the adoption by the American Library Association of a National Interlibrary Loan Code in 1917. This code, expected to govern all borrowing and lending libraries, was successively modified up to 1968, when the version currently in use was adopted. The main provisions of the current version are that interlibrary loan is to be used for research needs, not for entertainment or recreational reading. It is to be used only for graduate students and for faculty, not for undergraduates. A borrowing library is to request only "unusual items," not material needed "to meet the normal study, instructional, informational, and research needs of its users," which material it is expected to provide in its own collection. Expenses of the loan are to be paid by the borrowing library, except "nominal" costs such as postage. The borrowing library is supposed to locate copies of the needed item and to borrow from a nearby library rather than from one more distant. This last rule is probably the one most frequently violated. Some borrowing libraries conscientiously follow the code; others are lax about verifying the bibliographic information of the needed item and the locations of copies. The request is frequently sent to a large library, which has a high probability of having the needed title, rather than to a known, verified location. Below (p. 30-31) it will be seen that this failure on the part of the borrowing library is one of the major problems of present interlibrary loan.

Some regions, states, and local library systems have adopted a local code to govern their libraries. These codes are usually more liberal than the national code in two major respects. Borrowing is (1)

not restricted to research needs, and (2) does not exclude material such as recently published books and journals or other items not covered by the national code. The lending library has the privilege of refusing to fill any of these requests. Multi-state regions and states which have adopted their own codes expect participating libraries to observe the national code when borrowing outside the region or state.

Requests are normally made on the A.L.A. Interlibrary Loan Request Form (see Fig. 1), which provides space for author, title, edition, identification of source in which verified, and request for microfilm or photocopy if original cannot circulate. The form also provides a place for the lending library to report a reason why it cannot fill a request. Requests made on this form are usually sent by mail, and the item requested is sent from the lending library by book-rate in the mail. Formerly, it was customary for the borrowing library to pay the postage both ways, but today some libraries have agreed that each library will pay postage one way. Another recent change in practice is the increased use of teletype in requesting a loan. This has the important advantage of saving days in completing the transaction, but may have the disadvantage for the lending library that some information normally included on the standard form may be lacking in the TWX message. The other stage of the transaction in which time can be saved significantly is the delivery of the material. Experiments using facsimile transmission have been tried but this method has been found in general to be too slow and costly. Delivery of material by regular truck runs has materially reduced the transportation time, and has been successfully used for years in certain local cooperative systems.



No. 488
GAYLORD
BROS. INC

Date of request:

Borrowing Library

Call-No.

For use of | Status | Dept.

Author (or periodical title, vol. and year)

Title (with author & pages for periodical articles) (Incl. edition, place & date) ☐ This edition only

Send sheets A, B and C to lending library, and enclose shipping label

Verified in (or source of reference)

Lending Library

If non-circulating, please supply ☐ Microfilm ☐ Hard copy if cost does not exceed $

Fill in per-tinent items under REPORTS, return sheets B and C to borrowing library

rev. 1-68

Note: The receiving library assumes responsibility for notification of non-receipt.

AUTHORIZED BY:
(FULL NAME)

Title

A
REQUEST

INTERLIBRARY LOAN REQU

According to the A.L.A. Interlibrary Loan Cod

REPORTS: Checked by

SENT BY: ☐ Library rate ☐

Charges $ Insured for $

Date sent

DUE

RESTRICTIONS: ☐ For use in library onl

☐ Copying not permitted ☐

NOT SENT BECAUSE: ☐ In use

☐ Non circulating ☐ Not ov

☐

Estimated Cost of: Microfilm

Hard copy

BORROWING LIBRARY RECORD:

Date received

Date returned

By ☐ Library rate ☐

Postage enclosed $ Insured for $

RENEWALS: (Request and report on sheet

Requested on

Renewed to

(or period of renewal)

Fig. 1. ALA Interlibrary Loan Request Form.

This self carbon form is in four parts:

A. Request to lending library;

B. Report to requesting library;

C. Interim Report to requesting library;

D. Notice of Return by requesting library.

Proposals for delivery by air freight have been made, but this method has not yet been tried on any substantial scale.

Another trend is the provision of photocopies of journal articles in lieu of lending the original. This is so advantageous over lending the original copy, both in postage cost and in retention of the original for other needs, that it awaited only the development of satisfactory technology to become common practice. Usually the cost of photocopy is assumed by the borrowing library, but some lending libraries have found it easier to absorb this cost rather than to trouble with accounting and billing. Large libraries, which have a great amount of reciprocal lending with other large libraries, are increasingly adopting this practice. Experiments will continue to be made to improve the success and diminish the time required to fill requests.

The Statistics of Interlibrary Loan

What is the estimated total volume of interlibrary lending in the United States today, and what is the expected volume for 1980? Before attempting an answer to these questions, the value and reliability of such estimates might be better understood if the sources of statistics on interlibrary loan are first reviewed.

Part of the statistical data compiled by the U. S. Office of Education and published as Library Statistics of Colleges and Universities: Data for Individual Institutions included the number of items borrowed by each library during the report year and the number of items lent. Unfilled transactions were not counted. In the counterpart publication, Analytic Data, the data reported by individual institutions were summarized in

several different classifications. These data on interlibrary loan were first collected in the 1962/1963 issue and were discontinued after the 1967/1968 issue. They are not being compiled regularly by any agency at this time.

An estimate of the present total volume of interlibrary loan involving academic libraries in the United States was made by Vernon E. Palmour and others in the report prepared for the Association of Research Libraries, A Study of the Characteristics, Costs, and Magnitude of Interlibrary Loans in Academic Libraries.[1] Data were collected by questionnaire from a sample of public and private academic libraries of all sizes; each library was asked to report the total number of interlibrary loan requests it had sent out for each of the years, 1965/1966 to 1969/1970, and the total number of requests it had received from other libraries in those years, whether or not the requests had been filled. The reported statistics were then projected to national estimates for borrowing and lending by public and private academic libraries in each of three size groups. These projections were made by multiplying the reported statistics by the ratio of the total number of libraries in each size group to the number reporting from that size group.

From these estimates for present interlibrary loan traffic involving academic libraries, Palmour estimated the magnitude of borrowing and lending transactions for the next five years, 1970/1971 to 1974/1975. These estimates were made by straight-line projections of the estimates for 1965/1966 - 1969/1970, which had exhibited a straight-line increase. Palmour recognized that "many diverse factors might influence the magnitude of interlibrary loan activities" in the future but was unable, within the scope of his project, to make a detailed analysis of the influence

of these factors. The estimates by Palmour are the only national estimates available for interlibrary loan since the U. S. Office of Education discontinued collecting these data from academic libraries. The straight-line projection for five years based on approximately straight-line growth during the last five years is considered reliable, although it would not be wise to project these estimates by straight line for another five years, to 1980, with no additional reported data.

It is noted that the Palmour estimates do not cover the considerable interlibrary loan traffic that does not involve an academic library as borrower or as lender. Furthermore, there is no national estimate of this activity. An estimate of the total interlibrary loan activity in a limited area which the investigator considers reliable is that made for New York State Library by Nelson Associates, Inc. [2] This study covered interlibrary loan activity for the whole state of New York for 1969. Statistics of interlibrary loan activity were sought by Nelson Associates, Inc., from all types of libraries, but the response rate was poor, averaging 27%. The difficulties of applying these estimates nationally are (1) how can one estimate a national total from the statistics furnished by only one state, (2) how accurate a profile of national interlibrary loan activity is furnished by New York State? For example, the New York Public Library is included in the Nelson Associates, Inc., statistics among the public libraries of the state, but it is recognized to be much more nearly a research library than a typical public library.

In recent years two studies have been made of the Pacific Northwest Bibliographic Center[3] and one of library network alternatives for the State of Washington.[4] All three of these studies include some data on

interlibrary loan, but these statistics are based on the records kept in the PNBC and on those of a few large lending libraries, and do not provide a very accurate picture of the total activity for the region covered.

These are the only recent sources of statistics on interlibrary loan in the United States considered to be of use to the present study. In the estimates of total present activity and projected activity to 1980 to be made in the next two sections, these difficulties are seen: (1) what addition should be made to Palmour's estimates to represent the interlibrary loan activity in which academic libraries are not involved, and (2) what shape of growth curve should be applied to present estimates for projection to 1980?

The Present Volume of Interlibrary Loan

In loans between libraries, several different levels are recognized: (a) loans between a main library and its own branch or department libraries; (b) loans between members of a local cooperative system; (c) loans between participating libraries in a state-wide or interstate regional system; and (d) loans between libraries having no formal agreement with each other, often not close geographically.

In attacking the first difficulty named in the previous paragraph, it must be decided first which of these levels are to be considered. Level (a) is clearly not considered part of interlibrary loan. Level (b) is similar in many ways to level (a); the collections of the member libraries and of the headquarters library are closely related. Here, note will be taken of interlibrary lending on level (b), but its statistics will not be added to those of the two upper levels in making a national estimate. It is known without actual statistics that a very large

proportion of interlibrary loan is completed within local cooperative systems. In their study of interlibrary loan in New York State, Nelson Associates, Inc., asked libraries of all types to report on the frequency with which their requests were handled by different types of libraries in the state. Public libraries reported 83% of their requests handled within their local system, and all types of libraries in the state combined reported 64% of their requests completed or cancelled within the local system.[5] Other states have had similar experience or are moving in this direction. Other than this level of interlibrary lending, how much should be added to Palmour's estimate in arriving at a figure for interlibrary loan activity involving all types of libraries? Palmour's estimate for requests received in academic libraries for 1972/1973 (the fourth projected year following the last year for which he was able to collect statistics) was 2,224,000.[6] For the purpose of estimating the present and future volume of interlibrary loan, only Palmour's projections for requests received by libraries, and not the much smaller quantity of requests sent out from libraries, will be used. The large academic libraries from which Palmour received reports handled many more requests from other libraries than the number of titles they attempted to borrow. But in estimating the total number of requests handled by all libraries, it is sufficient to count only those handled by the lending library and not the same requests sent out from the borrowing library.

In attempting to estimate the appropriate amount to add to Palmour's figures, in order to account for interlibrary loan transactions that are not related to academic libraries, one may follow one of three courses: (1) throw up one's hands at the impossibility of making any estimate,

(2) adopt a bold attitude and make positive assertions without qualms about the lack of supporting evidence, or (3) try to make an estimate based on the available evidence noting reservations about the reliability of the estimates. The third course is taken here. The following method is proposed for making an estimate of the non-academic interlibrary loan in the United States to add to Palmour's figures: statistics of requests received by libraries of different types in a given state or larger region can be studied for the ratio of those received in academic libraries to those received in other libraries; since we have an estimated national total for requests received by academic libraries, the median ratio of academic to non-academic loans can be applied nationally to arrive at an estimate for requests involving all types of libraries.

In their study of interlibrary loan in New York State, Nelson Associates, Inc. indicated that if loan requests completed within the local system were not counted (see above, p. 21), only 19% of the remainder are sent to academic libraries in and outside the state, compared to 37% sent to the New York State Library, as the headquarters of NYSILL, the state interlibrary loan network, 18% to medical libraries, 5% to national libraries, 5% to business libraries, and 16% to other libraries. If the categories medical and national libraries are added to academic libraries, since their lending is often reciprocal, the balance between requests sent to academic libraries and to non-academic libraries becomes more even, as seen in the second row of Table 1. The third row is taken from the study of Washington State by Reynolds showing the proportion of the loans made by different types of libraries to other libraries within the state.[7] Another table in her study shows the number of loans made by large libraries in Washington to borrowers within and outside the state.[8] This table is summarized in the fourth row.

The ratio of academic loans to loans by non-academic libraries is shown in the

Table 1

Proportion of Loans from Different Types of Libraries

Study	Type of Library: Academic	Public	Other	Ratio of Academic to non-Academic
Nelson Assoc., (a)	19%	37%	44%	1:4.3
Nelson Assoc., (b)	42	37	21	1:1.4
Reynolds, (a)	12	88	--	1:7.3
Reynolds, (b)	23	72	5	1:3.3

last column of Table 1. Although the range of these ratios is wide, that taken from Nelson (a) and that from Reynolds (b) are fairly close. The median of these ratios of 3.8 may be taken as a multiplier to use with Palmour's estimate. Selecting some multiplier is an arbitrary decision at best. Applying this factor to the estimated 2,224,000 requests received in academic libraries in 1972/1973 indicates that more than 8,451,000 loans were received in other types of libraries. Thus the total number of requests handled in 1972/1973 by all types of libraries may be more than 10,500,000.

The Future Volume of Interlibrary Loan

From this base it is possible to estimate the future volume of interlibrary loan for a limited number of years. It was noted above (p. 15) that Palmour used the straight-line projection because his data for the past five years indicated straight-line growth, and because he had no way of predicting a change in the curve. To continue this

straight-line projection for an additional five years to 1979/1980 is hazardous, without additional supporting statistics. But despite the strong expectation that increases in population, in number of titles published, and in the number of persons involved in formal and informal education will cause a considerable increase in the magnitude of requests, there is no way of predicting what shape of curve the rate of change in interlibrary loan will follow in future years. There is not even assurance that it will continue to increase, although most indicators point in this direction. Lacking any reliable national statistics later than the Palmour data, and lacking any reliable national data on the magnitude of interlibrary loan activity that is not connected with academic libraries, a straight-line projection from the 1972/1973 estimates is proposed, with the recognition that the resulting estimates are more likely to be too low than too high. If the multiplier of 3.8 has been set too high, the error would probably be compensated in part by using the straightline instead of an exponential projection.

In Appendix B, "Items Requested from All Types of Libraries, 1965 - 1980," projections are made for interlibrary loan requests from academic libraries and from non-academic libraries, and for their totals. As in the estimates of the present volume, only those requests handled by lending libraries are counted, not the number of requests sent out from borrowing libraries. The multiplier 3.8 is again used to calculate the magnitude of loans by libraries other than academic libraries. Projections from 1975/1976 to 1979/1980 continue the straight-line growth used earlier. These projections need to be used with the same caution voiced earlier, but they do at least indicate the level of interlibrary loan activity anticipated by 1980. We are no longer dealing with the

1,263,000 loans recorded by the U.S. Office of Education as lent by academic libraries in 1967/1968 nor with the 2,646,000 estimated by Palmour as the magnitude of loans that would be made by academic libraries by 1974/1975. The expected 17,280,000 loans from all types of libraries by the year 1980 can be handled only with a better organization of interlibrary lending than is now available.

Types and Sizes of Libraries Originating Requests

Interlibrary loan requests come from libraries of all types. Studies of interlibrary lending among academic libraries show that most (60% or more) requests received by academic libraries come from other academic libraries. But studies of the total interlibrary lending in a state or in an interstate region [9] indicate that a much smaller percentage (11% to 44%) of the requests come from academic libraries and 50% to 75% come from public libraries. Special libraries, which account for nearly 20% of the requests reaching academic libraries, originate only 10% or less in most of the other studies. Lacking a national study of interlibrary lending among all types of libraries, it can only be surmised that public libraries are responsible for at least as many or more requests as academic libraries. Statistics on the number of requests originating from libraries in different size classes are contradictory and inconclusive. It appears fairly certain, however, that the small public library (under 100,000 volumes) is the heaviest borrower from other public libraries, but that the academic library in the 100,000 to 500,000 volume group is the heaviest borrower from other academic libraries.

Types and Sizes of Libraries Filling Requests

There is little evidence about the types of libraries to which interlibrary loan requests are sent. The studies by Thomson and Palmour

were concerned only with academic libraries as lenders. The study of interlibrary loan in New York in 1968 showed that 64% of requests by all types of libraries in the state were never referred outside the local system (see above, p.17). But if these are not counted, 37% of the remaining requests went to the State Library as headquarters of NYSILL, and 19% went to academic libraries within or outside the state. (The latter figure does not include requests which the State Library, unable to fill from its collection, referred to a university library in the state.) The remaining 44% of requests were sent to medical libraries, business libraries, national libraries, and others.[10] A study of the Pacific Northwest Bibliographic Center[11] showed the following distribution between different types of libraries as potential lenders: academic 32%, public 29%, state libraries and library systems 20%, special 3%, other types 4%; the remaining 12% were referred to libraries outside the region.

If number of requests is viewed as a function of the size of the lending library, the largest libraries are asked to lend much more than their proportionate share. For academic libraries, 75% or more of the loans are made by 9% or less of the largest libraries.[12] Comparable findings about public libraries as lenders are not available, but it is reasonable to expect that those having the largest collections (in the central library) receive the largest number of requests, at least from their own and adjoining states. It has also been shown that large libraries borrow far less than they lend. Thus, the smaller library gets more benefit from the system.[13]

The Geography of Interlibrary Loan

There is evidence that a large proportion of interlibrary loan requests are filled within an organized local system, that another significant proportion are filled within the state, that still more are filled within the multi-state region, and that only a relatively small number need to be referred to libraries beyond the regional level. Some of the recently published studies of interlibrary loan and statements of librarians having experience with it support this description of a hierarchical satisfaction of interlibrary loan requests.[14]

Palmour showed that the geography of interlibrary lending depends on the size of the lending library's collection and on the type of library making the request. More than 40% of the requests received by libraries having more than 500,000 volumes come from outside the state, as compared to 12% for libraries of 20,000 to 100,000 volumes.[15] When divided by type of requesting library, requests from other academic libraries were the only group amounting to as much as 50% from out-of-state libraries. From 25% to 28% of the requests of special and governmental libraries were from out-of-state, but only 7% of those from public libraries came from out-of-state.[16] These findings refer only to requests received by academic libraries. No comparable findings are available for interlibrary lending by public, special, government, and other libraries.

Characteristics of Materials Requested

The form, subject, date, and language of the materials most often requested are of interest in planning for interlibrary loan of the future. The form of the materials seems to depend, at least partly, on the type of library requesting them. When requests from all types of libraries of a state or region are analyzed, the preponderant form (62% - 94%) is

books.[17] In these studies, requests from public libraries predominate. Studies of academic and special library borrowing indicate a heavier use of serials, dissertations, and other forms (50% - 74%).[18]

Conclusions about the subject field of the materials vary; however, it appears that none of the three broad divisions, humanities, social sciences, or science/technology, is requested much more than the others.[19]

Data on the currency of items requested point to a preponderance of recent materials. Despite the almost universal policy of not lending current material in frequent demand, 20% to 25% of the requests are for items published in the past three years; materials published within the past ten years make up 50% to 70% of the requests.[20]

Most studies are in close agreement about the language, as well as the currency, of materials requested. Requests for titles in English range from 66% to 99%, with an average of about 85%.[21] The humanities provide more requests for monographs, for older titles and for titles in a language other than English. Science/technology provides more that are serials and recently published.[22] Another characteristic of interest is not covered in any of the recent surveys of interlibrary loan but is known from "user" studies: a large proportion of the requests in science/technology are for material in the recent volumes of a relatively small number of journals, but the requests in the humanities draw on a much more diverse literature in the number of titles, subjects, dates, and forms of publication.[23]

The Speed of Interlibrary Loan Service

The amount of time required to provide interlibrary loan service to patrons is the sum of these parts:

1. at the borrowing library, acceptance, verification, and preparation of the request; notification to the patron of success or failure of the request;
2. communication of the request by mail, TWX or other medium; sending the item by mail, messenger service, United Parcel Service, or, rarely, by facsimile.
3. at the lending library, searching the catalog, paging the item, checking records, packaging, and/or photocopying (This portion of the total time is also referred to as "cycle-time").

The total time, where borrowing from academic libraries is concerned, is found to be within ten days for about 50% of the cases and within fifteen days for about 70% of the cases.[24] Efforts made to reduce the cycle-time have resulted in an average time for this phase of one to three days. The importance of the total time required to fill a loan and efforts made to reduce it are described below (p. 31, 32-33).

Verification of Bibliographic Accuracy and Locations

Another major problem is the inaccuracy of bibliographic information for requested titles (see p. 30). Inaccurate requests are not a majority of those received; they only seem so. It has been demonstrated that two-thirds or more of the requests are accurate or have only minor inaccuracies that do not interfere with ready identification.[25] But the other third, which has less than adequate information, requires far more of the librarian's time and attention than its number and importance warrant. All too often, these titles are not elusive, unlisted items, difficult to verify.[26] Both the success rate and the time required for

filling requests are significantly affected by the accuracy of the original request.[27] A related problem is the failure of the requesting library to learn what library owns copies of the needed title, information that would probably facilitate obtaining the title quickly. At least one of every seven items requested could not be supplied because the library to which the request was sent did not own the title.[28] But Thomson showed that borrowing libraries often misread, overlooked, or ignored location information provided in bibliographies used for verifying the item.[29]

The Outcome of Interlibrary Loan Requests

The most important criterion of an interlibrary loan system is its success in filling requests. In evaluating a system, the reasons for not being able to fill requests are among the data needed most. Statistics on filling requests may refer to the success rate attained in the single library to which the request was sent first or to that achieved after it had been referred to more than one library. Actually, there is no adequate study of multiple referrals or "passes". Most of the success rates reported are those obtained from the single library approached: these range from 64% to 83%.[30] A few others are rates resulting from passing requests through a network or switching center, from which they are referred to a library believed or known to own the title. These range from 64% to 74%.[31] The latter rates are sometimes lower than those based on the single library first approached, because they may involve mostly those titles which could not be located and are harder to find. Success rate has been observed to increase significantly in a library which has made its holdings known to potential borrowers through a union catalog or book catalog, or by making its catalog available on microfilm.

Several studies of interlibrary loan have categorized reasons for not filling requests in these three groups: (1) not owned; (2) not available (at the time of the request), i.e., lost, missing, at the bindery, in use, on reserve, or the title is owned but not the volume or issue requested; and (3) non-circulating. The last group included serials, rare books, and items the library does not wish to lend.[32] Of the several reasons, "not owned" was most often cited for inability to fill the request: about 15% of all requests, but about 50% of those that could not be filled. "Not available" was the next most frequent cause; 10% of total, but 33% of those not filled. "Non-circulating" was the least frequent: 5% of total - 16% of those not filled.[33] It may be noted that those items already out on loan when requested on interlibrary loan are only a part of the 10% reported as "not available." At the present time, interlibrary lending is apparently not in serious competition with use of the material by the lending library's own patrons.

Success rate has been reported for requests from different types of libraries and for items of different languages, dates of publication, subjects, and form. Little difference was found for these variables. The lowest success rate was for current material, titles in the social sciences, and government documents.

Effectiveness of the Present Interlibrary Loan System

An attempt has been made to assess the effectiveness of the present system from opinions expressed in the literature and in interviews with librarians and users. The general attitude is that the existing system is adequate for the present volume of interlibrary lending both as to success in filling requests and as to time and cost of filling requests.

There is no assurance, however, that this will be true, if there is a significant increase in interlibrary loan activity. The inadequacies of the present system are to be found, first, in the unequal distribution of the requests (see p. 23, below) and, second, in the number of requests which are received without adequate bibliographic verification or location of copies by the borrowing library. These problems are discussed in more detail below (see p. 30). They have become severe enough to threaten the stability of the present system, if they are not at least partially corrected. Steps are being taken in some states to solve these problems among their own libraries, but an attack on a national scale is sorely needed. The lack of adequate resources is not seen as a problem in this country, as it has been in Europe, probably because large American libraries have enjoyed relatively liberal acquisition budgets for the past two decades, and have made strong efforts to ensure that at least one copy of every current publication of potential research value is acquired in some library.

Major Problems of Interlibrary Loan

The major problems in the present system seem to be these: (1) the burden placed on large libraries by a great increase in loan requests without compensation for staff, supplies, collection maintenance, and other costs incurred; (2) the difficulty which lending libraries encounter in filling requests which have been inadequately checked for bibliographic information or location; (3) delay in communications and delivery of requested items; and (4) the difficulty which borrowing libraries encounter in verifying entries and locating copies in other libraries.

The first problem has been recognized increasingly during the past two decades, is frequently voiced in the literature,[34] and is one of the concerns which led to the several studies of interlibrary loan sponsored by the Association of Research Libraries (see p. 32). Thomson pointed out that 63 large research libraries lent 69% of the total items loaned by academic libraries, and another 43 libraries loaned an additional 12%. Thus, slightly more than 5% of the academic libraries reporting statistics to the U. S. Office of Education 1963/1964 accounted for 81% of the loans.[35] Palmour's findings eight years later also show a heavy imbalance of lending, although not quite as much as found by Thomson.[36]

The second problem is periodically raised in the literature and is a standard topic of conversation when interlibrary loan librarians get together. The investigator has found that librarians regularly working with interlibrary loan are little concerned about the status of the borrowing patron, the purpose for which he requested an item, or even the type of item requested, if within reason, despite restrictions on these matters by the A.L.A. Code. Rather, their major concern is with garbled and incomplete requests, which consume much more of their time and attention than the more numerous complete and correct requests. One bibliographer stated that the 10%-12% of requests with misspelled or incorrect entries take about 50% of her time. Most are willing to spend a large amount of time verifying titles requested, but express the wish that requesting libraries could send their unverified requests to some kind of bibliographic centers which would complete or verify the entries and supply location information before the requests were sent on to the lending libraries.

The third problem, delay both in communication and in delivery of the item, has been reduced in many state and regional systems. Communication has been improved through the use of TWX to connect major borrowing and lending libraries. Document delivery has been improved by using local messenger service or United Parcel Service. In general, however, loans continue to be sent by mail and are subject to the vagaries and delays of the U. S. Postal Service.

As for the fourth problem, little attention has been paid to uncovering the reasons why borrowing libraries send out unverified requests. Thomson showed that libraries often fail to verify their requests, although they own a bibliography which contains the complete form of the title, or they fail to note the location of an item when it is given in the same bibliography.[37] Perhaps the reasons for this are inexperience and overwork more than the lack of resources needed to verify bibliographic and location information. Experienced interlibrary loan librarians have suggested in interviews that it is generally the lack of bibliographic expertise and ignorance of interlibrary loan requirements, rather than laziness or carelessness, which result in incomplete and unverified requests.

Since 1965, much progress has been made on the local, state, and regional levels to improve interlibrary loan service through systems and networks, but no change has yet been made nationally to help solve the problems identified above.

Solutions Already Proposed

Several solutions to these problems have been put forward in the past or are presently under consideration. These are outlined below:

1. To decrease or eliminate the financial burden on those large libraries that are major lenders, it has been frequently proposed that a fee be paid

by the borrowing library for each transaction. The Association of Research Libraries currently has two studies in progress bearing on this proposal. Westat Research, Inc., under one ARL contract, is investigating the potential reaction of patrons and borrowing libraries to a fee system, its probable effect on quantity and distribution of requests and on overall service, and other general aspects of such a system. Concurrently Becker and Hayes, Inc., also under contract from ARL, is studying a System for Interlibrary Communication (SILC), which includes provisions for system-wide records of transactions through a computer network. A fee system could easily be incorporated into SILC. On the other hand, the deleterious effect that a fee system might have on present borrowing has been noted, and A.L.A.'s Reference and Adult Services Division adopted a resolution opposing the adoption of a fee system as a general practice before careful consideration is given to its effects.[38]

2. To alleviate the problem of unverified requests, it has been widely suggested that libraries refuse to accept unverified requests, but it has already been noted that most bibliographers in large lending libraries are unwilling to turn back incomplete requests if they can complete them sufficiently without spending too much time. Offending libraries are often warned, however, that service to them will not be continued, unless they attempt to verify their requests. This is generally done only to the library large enough to have the resources for verifying requests but which regularly neglects to do so.

3. Solutions to the problem of slow communications have been tried by linking libraries by TWX, and by using airmail, telephone, and messenger service to speed requests.

Delivery of loans has been improved by supplying photocopy of needed pages by mail or airmail; by the use of air parcel post, airmail, and first class mail instead of slower postal methods; by regular messenger delivery, United Parcel Service, and air freight, instead of U.S. mail; and, occasionally, by use of facsimile transmission.

4. Few attempts have been made to assist borrowing libraries to improve their bibliographic checking. The Illinois State Library has made grants to local system headquarters to increase their holdings of bibliographies and requires them to verify requests before sending them beyond their own system through the state interlibrary loan system. Little or no effort has been made to instruct librarians in small libraries in the proper method of making requests.

General Statements

Before proceeding to an examination of the different possible configurations of centers for interlibrary lending, some general statements about networks of libraries and about systems for interlibrary lending will be made.

1. The system should be user-oriented, not library-oriented. The guiding principle should always be "how will this policy or practice improve the service to the user?" There must be great effort expended to achieve a balance which will make the system both efficient in serving the user and at the same time operationally cost effective.

2. The requirements of a system for interlibrary loan, which focuses on service to the user, are that it

(a) achieve the greatest possible success in delivering the needed material, and

(b) take the least possible time to respond to the request.

3. The system should have sufficient success, speed, and reciprocal loan privileges so that libraries will want to participate because of the advantages to their own patrons. No library should be required to operate within the system.

4. A library has the responsibility to maintain a collection sufficient for the normal needs of its patrons; it should not take advantage of membership in the interlibrary loan system by reducing its book and periodicals budget and relying on the system to fill the resulting gaps.

5. A library has its first obligation to its own patrons and may refuse to lend any material because of local needs or special requirements.

6. Centers should stock material for which some demand is anticipated but not material in such common demand that it should be part of each library's collection.

7. All requests should be verified if possible for correct and complete bibliographic data and for known locations in one or more libraries.

8. A request should be filled according to an organized pattern of referral. This pattern will not be the same for all situations but will be selected to give the most advantage in the particular case. Some delay may result when requests are sent through several levels of a hierarchy of screening centers rather than directly to the library that could fill them. The majority, of requests, however, should be filled more promptly because of the shorter distances involved. Regional clearance before sending requests directly to large research libraries will ensure that these libraries will not be inundated or overburdened with many requests which could have been filled from a local library within the

requestors' region.

Centers for Interlibrary Loan

The objective of the present study is to provide background information for "the development of a national center or a system of regional centers that would provide user access to library materials of all types not available locally." To this end, several possible types of centers for improving user access to materials will be reviewed in this section.

A center for this purpose might be one of three types, according to its function: (1) a lending center, (2) a bibliographic center, or (3) a combination lending and bibliographic center. Each of these three types could be established as a separate institution or could be housed in an existing library, using part of its building, staff and collection, for which the host library should be compensated. These six possibilities will be described briefly.

1a. Lending center - separate. The prototype is the National Lending Library at Boston Spa, England. It serves no resident clientele and has no services except lending its materials through interlibrary loan. It stocks periodicals, reports, conference publications, and monographs in science, technology, and social science, and is currently adding titles in the humanities. Established primarily for service to British libraries, it also lends to foreign libraries. The United States has no counterpart. Nearest to this type of center in the United States is the Center for Research Libraries, which has a storage function as well as a lending function and which limits many of its services to its member libraries. Since its establishment in 1949, however, its lending function has become more important, and some of its holdings are available to non-members.

1b. Lending center - existing library. Most research libraries and many other large public and state libraries have long been functioning much as interlibrary lending centers in addition to their usual roles. This service has been given without compensation, although most state libraries have assembled general collections for the purpose of lending to other libraries in the state.

2a. Bibliographic center - separate. By a "bibliographic center" is meant a center with the function of completing bibliographic references, locating one or more copies, and forwarding the request to one or successively to several libraries owning copies. Bibliographic centers do not have a lending function. No separately established bibliographic center in the United States is known to the investigator. Such a center would have a collection of bibliographies, union catalogs, and union lists to be used only for bibliographic verification and identification of location.

2b. Bibliographic center - existing library. The well known bibliographic centers in the United States are housed in existing libraries: the Pacific Northwest Bibliographic Center (PNBC) in the University of Washington Library; the Bibliographic Center for Research, Rocky Mountain Region, in the Denver Public Library; the Cleveland Regional Union Catalog in Case-Western Reserve University; and the Union Library Catalogue of Pennsylvania in the University of Pennsylvania. These centers are somewhat more independent from the libraries which house them than are the lending centers in existing libraries described above in 1a. The latter have no independent existence, in fact. The bibliographic centers in existing libraries described here were established for a separate function, have a separate staff, separate union catalog, and some printed bibliographies and catalogs in a separate collection. They do, however, use the general

bibliographic collection and various services of the host library, which in turn derives some benefit from having the center in its own building.

3a. Lending center/bibliographic center - separate. None known.

3b. Lending center/bibliographic center - existing library. Two close parallels of this kind of center are known. The PNBC serves members throughout the region for bibliographic needs and, when possible, supplies items from the University of Washington, either by loan or photocopy. The New York State Library is the headquarters of NYSILL, the state interlibrary loan network. Requests which cannot be filled in the local or intra-state regional system are sent to the New York State Library. The State Library tries to fill them from its own collection before referring them to another library in the state.

Conclusions

1. Accurate statistics are not available on the characteristics of items most frequently requested for interlibrary loan, but it is estimated that approximately 50% are monographs, 34% serials, and 16% dissertations and other forms. Items published within the past ten years constitute 50% to 60% of the requests, and items in the English language are 80% to 90% of the total. Least uniform are the findings on the subject fields of the material requested most often: titles in science and technology appear to be requested slightly more often than those in humanities; material in the humanities is slightly more popular than that in the social sciences. The greatest variations from these general findings are in the statistics of lending within a state, but this report is primarily concerned with requests that are sent beyond state lines. Information on the characteristics of items requested offers important guidelines on the type of material most appropriate for a lending center.

2. Where statistics have been furnished for success in filling requests within a state or interstate system, about 65% to 75% have been filled within the system. Where additional estimates have been made for local systems within the state, it is seen that a large number of requests of library members of these systems are filled without referral to the state library or other larger library. From these reports, it is concluded that a large number of interlibrary loans can be filled locally if they are properly screened.

3. Statistics show that approximately 15% of the requests received in a library are for items not owned by that library. Up to one-third of all requests have not been bibliographically verified. Interlibrary loan librarians report that they spend much more time in verifying

and searching for these items which have not been verified or which they do not own than they do for other requests. The need is indicated, therefore, for more effective use of bibliographies, union catalogs, and other reference sources for verifying and locating requested titles.

4. Bibliographic centers should be established at the state or multi-state regional level to do this checking for libraries unable to do it.

5. In all parts of the United States, there exist large libraries having good collections of bibliographies, union catalogs, and other reference books and catalogs needed for verifying and finding locations of requested titles. It would be better to make use of these collections and to strengthen them than to create new centers.

6. Large libraries of all types should be encouraged to continue to handle requests not filled locally, as they have been doing, but appropriate contractual agreements should be made for services of a national and regional nature. The details of this contract and compensation need not be worked out at this time, but the principle needs general agreement.

7. If a system of centers is to serve the different parts of the United States, and if these centers are to be compensated for their service, there should be a national center to plan and implement the system, coordinate the centers, and serve as a back-up lending center for material the other centers cannot supply.

Recommendations

The following recommendations are based on the study of the literature on interlibrary loan and networks, personal sources of information, consultation with librarians, survey of possible center configurations, and the conclusions outlined on previous pages. Neither a national center nor regional lending centers as separate institutions are recommended because it is believed that the present resources in United States libraries are sufficient to meet present interlibrary loan needs. It cannot be emphasized enough that this proposal assumes that libraries will not reduce their individual acquisitions below the level needed to support their normal needs. At this time, it is hoped that the major problems will be solved by better organization of interlibrary loan on a national basis and compensation to existing large libraries to supplement their staffs and their resources to enable them to cope with the present and expected volume of interlibrary loan traffic.

It is recommended that a national system for interlibrary lending be established with strong central planning and coordination but a highly decentralized service program, according to the following outline.

1. The National Commission on Libraries and Information Science should undertake the planning and fulfillment of the following tasks:

   (a) determine the appropriate regions of the United States in which a national system for interlibrary loan should be organized. The "appropriate region" may be a single state, in the case of a populous state which already has a hierarchical or other interlibrary loan system. In other cases, it might be a group of adjoining states.

(b) for each region, designate one existing library as a bibliographic center.

(c) in addition to bibliographic centers, designate other libraries having outstanding or strong collections in a number of subject fields as resource centers. These will be libraries which have been important sources for interlibrary loan in the past, and they will be responsible for continuing to make their collections available to meet the nation's needs.

(d) designate the three national libraries, the Library of Congress, the National Agricultural Library, and the National Library of Medicine, and the Center for Research Libraries to serve as national back-up centers, the responsibility to be divided among them according to their collection strengths.

(e) draw up contracts with the libraries designated as bibliographic centers, resource centers, and back-up centers, outlining their responsibilities and stipulating the support grants, transaction fees, and other compensation they will receive for services.

(f) serve as a coordinator to establish policies, make decisions, maintain fiscal accounts, and perform other continuous tasks necessary to keep the system working.

2. The National Commission on Libraries and Information Science should consider appointing an advisory committee on the planning and coordinating activity described above. The advisory committee should include representatives from different kinds of libraries and users of the system.

3. The bibliographic center has the following responsibility, for which it ought to be compensated:

(a) to build up its collection of bibliographies, union lists and catalogs, and other sources for completing bibliographic information and for locating copies of needed items.

(b) to check each request received from a library in the region, in order to see that there is adequate bibliographic and location information; if not, to provide this information, if possible.

(c) to forward the verified request to a library owning a copy in the region, or, if no library in the region has a copy, to a library outside the region. If this library cannot fill the request, the bibliographic center is to try another source and finally the national center.

4. The resource center (a bibliographic center may be, and usually would be, also designated as one of the resource centers) has the following responsibility, for which it would be compensated:

(a) to continue to maintain the collections in the special subjects for which it has been named as outstanding.

(b) to lend material from all of its collections except items which are needed locally, in circulation, in the bindery, or otherwise not available.

(c) to make its holdings known, as far as possible, through the publication of its catalog in book, microfilm, or other form and the publication of other guides to its resources.

5. The back-up center has the following responsibility, for which it would be compensated:

(a) to acquire everything published in the world in the subject fields or in the formats for which it has accepted responsibility (e.g., medicine as one of the responsibilities of NLM; theses of foreign universities as one of the responsibilities of CRL).

(b) to lend any needed item in its collection, if possible, when that item could not be lent by any resource library or other library; in other words, be a court of last resort.

(c) to try to acquire or to borrow temporarily from abroad any needed item which it does not have.

(d) to make its holdings known, as far as possible, through the publication of its catalog.

6. The support required for development costs, annual grants, compensation fees, etc., is the responsibility of the federal government, since the service being provided is a national one.

Outline and Methodology for a Cost Study

The outline and methodology for a cost study for initial development of a central library center and regional centers for interlibrary lending, as required in task D, is presented here to fit the system of centers recommended on pages 40-43. Costs will be divided into the following categories: (a) material, (b) personnel, (c) equipment, (d) building, (e) communications. These categories will be further defined as they are used.

Bibliographic centers

The bibliographic center is to be established in an existing large library in each state or multi-state region. Its present bibliographic collection is to be augmented with all bibliographies, union catalogs, and other lists and catalogs available to help it verify incomplete or incorrect requests originating in its area and find one or more locations of the item. The costs for initially developing these state- or regional-bibliographic centers can be estimated according to the following guidelines:

1. Material

The material needed in the bibliographic center consists of reference sources, not material for lending. The collection in each center will be tailored to meet the needs of the region and will include such items as local union catalogs, union serials lists, catalogs of resource libraries in the region, etc. There will also be a set of standard bibliographies and location sources which all centers will have: National Union Catalog, post- and pre-1956 imprints, Union List of Serials, New Serial Titles, British Museum Catalog, catalog of the Bibliotheque Nationale, etc. Even though the library designated as

a bibliographic center probably already has these standard bibliographies, they were acquired for the library's own use, and duplicate sets should be provided to serve the larger area, since this service will greatly increase the use of the collection.

The total cost of materials for each center can be estimated by adding to the cost of the standard collection, which is to be supplied to each center, an additional estimated 50% to cover the cost of regional lists and catalogs needed only in the one center. The estimate of 50% is arbitrarily chosen, but its accuracy is not critical because the cost of these regional items is not likely to be a major part of the total cost of initial development of the center.

2. Personnel

Personnel will be a major cost of the center. Size of staff (clerical, professional and administrative) will be a function of the estimated number of transactions to be handled per year. Palmour's cost data for "making the request" but excluding the amount for "assistance to patrons" can be used as a basis for estimating personnel costs for each center.[39] His data indicate that the costs of "determining location, verifying, completing form, filing, and mailing" make up 51.8% of the estimated costs of borrowing. Applying this proportion to the cost of each borrowing transaction ($7.61) results in a requirement of approximately $3.94 (in 1971 dollars) per transaction. This cost is made up of 69% professional labor cost, 21% clerical cost, and 10% student cost.

3. Equipment

This will be a minor cost for a bibliographic center, consisting only of the cost of necessary file, shelf, and office equipment and of computer terminals to connect into the proposed SILC system, if such a system is established.

4. Building

The bibliographic centers are to be established in existing libraries, but these libraries should be fully compensated for space, personnel, and collection use in carrying out this responsibility. Building cost will be based on the amount of space required for the collection of bibliographies and the staff required. The cost of this space is the appropriate percent of the total building cost.

5. Communication

In addition to normal costs for telephone, TWX and postage, the amount required here is the installation cost of linking the bibliographic center to the SILC network if such a network develops. It does not include the cost of the communication equipment.

Resource centers

As recommended above (p. 41), resource centers are existing libraries with strong collections and with outstanding holdings in a number of subject fields. They are the libraries which have been the important sources for interlibrary loan in the past, and it is expected that they will continue to fill those requests which could not be filled by a library within the borrower's local area, state or region. The resource library is to be compensated for this lending, in recognition of its making its collection available as a national resource. What cost will be involved in bringing these resource libraries into a nationally

organized system?

No development cost is seen for these libraries, other than the equipment and other cost of linking them to the SILC network. They are not required to add to their collections more than they would normally acquire. The transaction compensation or annual grants recommended are to pay the costs of staff and space needed to provide lending service nationally, which they have been providing without compensation. It is probable that the early bibliographic checking and the filling of requests at a local level when possible will reduce the quantity of requests coming to these resource libraries or will at least reduce the proportion of the national total which reaches them.

Back-up centers

The third element in the recommended system is the library designated as a back-up center. The resource libraries have built up their collections to fit the present and future needs of their own users. The back-up centers are needed to fill in any gaps still left for which a need somewhere has developed or may develop. There should be compensation to these back-up centers for acquiring and processing material solely for the national need. In addition they should receive compensation for transactions.

No cost of developing these centers is anticipated, beyond the equipment and other costs of linking them to SILC. The annual grants and transaction fees are seen as maintenance costs rather than as development costs. These back-up centers, like the resource centers, are being called on for service which they have previously offered without payment.

Further Studies Needed

During the course of the present investigation, several questions arose on which more information than we now possess would be desirable. Until additional information is available on these points, it would be difficult to arrive at firm decisions on certain matters. The order in which the suggested studies are arranged is not meant to indicate their relative priority. The first three studies fall more in the realm of knowledge for its own sake, while the last two have a more evident practical use. The information gained from the first three, however, may be of more benefit in the implementation of any large-scale interlibrary loan system than is apparent at first.

1. Study of the magnitude of interlibrary lending by all types of libraries.

A comprehensive survey is needed of the magnitude of interlibrary lending by all types of libraries in the United States. The method used by Palmour and others for surveying the magnitude of interlibrary loans among academic libraries can be applied to this more general problem. Once the probability sample has been made and data gathered by questionnaire, a similar study should be planned at intervals of several years over a ten- or fifteen-year period, so that data are available for a reliable projection of the magnitude of future interlibrary loan activity.

2. Study of the level on which loans are satisfied

Beyond the collection of data on the quantity of interlibrary loans, information is needed on the frequency with which loans can be completed at each level of a hierarchical system of screening centers. Such a study presents some difficulty because of the assumptions inherent in it, such as the assumption that statistics from states which have not organized their interlibrary loan into a hierarchical system can be compared to statistics from states which have. But data gathered from those states which have adopted a policy of not accepting requests at a higher level of the system unless they could not be filled at lower levels will give information of probable value in national planning.

3, Study of the number of lending libraries approached in trying to fill a request

Most studies of the outcome of interlibrary loan requests have taken account only of the outcome at the first library to which the request was sent. Data on the overall success rate on requests, regardless of the number of lending libraries tried successively would be of interest. Allied to this is the number of requests satisfied at the first library approached (a single "pass") and the number requiring two, three, or more "passes."

4. Study of methods of improving the identification of location of needed titles

Publication of the National Union Catalog, Pre-1956 Imprints, should help in learning where copies are held of titles published before 1956, as the post-1956 National Union Catalog facilitates location of books published after that date. But there are other means that can make more feasible the location of copies as near at hand as possible. These would include regional union lists, catalogs of large libraries, catalogs of individual libraries or of regional resources in computer data banks, etc. A study is needed of methods for locating resources in libraries that offer most success.

5. Study to establish equitable regions for interlibrary loan

The interlibrary loan activity and the resources, both library and financial, of each state should be studied, in order to determine the optimum division of the United States into state and multi-state regional systems for the most equitable distribution of interlibrary loan.

REFERENCES

1. A Study of the Characteristics, Costs, and Magnitudes of Interlibrary Loans in Academic Libraries, comp. by Vernon E. Palmour and others. Westport, Conn., Greenwood, 1972.

2. Interlibrary Loan in New York State. New York, Nelson Associates, Inc., 1969, p. 26.

3. Currier, Lura G. Sharing Resources in the Pacific Northwest; a Study of PNBC and Interlibrary Loan. Olympia, Washington, Washington State Library, 1969; Taylor, David M., and others. An Operations Research Study of the Pacific Northwest Bibliographic Center. Washington, D. C., U. S. Office of Education, 1972.

4. Reynolds, Maryan, and others. A Study of Library Network Alternatives for the State of Washington, chapter 2, "Interlibrary Loans." Olympia, Washington, Washington State Library, 1971.

5. Interlibrary Loan in New York State, p. 32.

6. A Study of the Characteristics, Costs, and Magnitudes..., p. 51.

7. Reynolds, op. cit., p. 15.

8. Ibid., p. 7.

9. Interlibrary Loan in New York State, p. 27; Casey, Genevieve. The Future Role and Financial Structure of the Bibliographic Center for Research Rocky Mountain Region; a Reconnaisance Study (Wayne State University, Office of Urban Library Research, Research Report no. 6). Detroit, 1969, p. 108; Currier, op. cit., p. 56a; Taylor, op. cit., p. 21; Reynolds, op. cit., p. 7.

10. Interlibrary Loan in New York State, p. 32.

11. Taylor, op. cit., p. 39.

12. A Study of the Characteristics, Costs, and Magnitudes..., p. 37; Thomson, Sarah K. Interlibrary Loan Involving Academic Libraries (ACRL Monograph no. 32). Chicago, A.L.A., 1970, pp. 5-6.

13. Thomson, op. cit., p. 6; A Study of the Characteristics, Costs, and Magnitudes..., pp. 50-52.

14. Interlibrary Loan in New York State, p. 32; A Study of the Characteristics, Costs, and Magnitudes..., p. 35-36; Currier, op. cit., p. 71; Taylor, op. cit., p. 40.

15. A Study of the Characteristics, Costs, and Magnitudes..., p. 35.

16. Ibid., p. 36.

17. Palmour, Vernon E., and Gray, Lucy M. Costs and Effectiveness of Interlibrary Loan and Reference Activities of Resource Libraries in Illinois. Springfield, Ill., Illinois State Library, 1972, p. 18; Currier, op. cit., pp. 60, 67; Interlibrary Loan in New York State, p. 103; MINITEX (Minnesota Interlibrary Teletype Experiment) Report Covering the First 18 Months of Project Operation, January 1, 1969 through June 30, 1970... Edward B. Stanford. Minneapolis, University of Minnesota, University Libraries, 1970, p. 6

18. A Study of the Characteristics, Costs, and Magnitudes..., p. 42; Thomson, op. cit., pp. 25, 71; Schmidt, C. James, and Shaffer, Kay. "A Cooperative Interlibrary Loan Service for the State-Assisted University Libraries in Ohio," College and Research Libraries, 32:202, May 1971.

19. Thomson, op. cit., p. 12; A Study of the Characteristics, Costs, and Magnitudes..., p. 39; Interlibrary Loan in New York State, p. 82; Palmour and Gray, op. cit., p. 19; Currier, op. cit., pp. 62, 67.

20. A Study of the Characteristics, Costs, and Magnitudes..., p. 39; Palmour and Gray, op. cit., p. 20; Currier, op. cit., pp. 60, 67; Taylor, op. cit., p. 25.

21. Thomson, op. cit., p. 31; A Study of the Characteristics, Costs, and Magnitudes..., p. 42; Interlibrary Loan in New York State, p. 103; Palmour and Gray, op. cit., p. 20; Currier, op. cit., pp. 60, 67.

22. A Study of the Characteristics, Costs, and Magnitudes..., pp. 41-42.

23. Simonton, Wesley C. "Characteristics of the Research Literature of the Fine Arts during the Period 1948-1957." Unpublished Ph.D. Dissertation, University of Illinois, 1960, pp. 12-13; McAnally, Arthur M. "Characteristics of Materials Used in Research in United States History." Unpublished Ph.D. Dissertation, University of Chicago, 1951, p. 135; Case Institute of Technology. An Operations Research Study of the Dissemination and Use of Recorded Scientific Information. Washington, D. C., U. S. Department of Commerce, Office of Technical Services, 1960, pp. 13-14.

24. A Study of the Characteristics, Costs, and Magnitudes..., pp. 47-48; Taylor, op. cit., pp. 22, 41, 45.

25. Thomson, op. cit., p. 37; NIL; a Study of Unfilled Interlibrary Loan Requests in the NYSIIL System. New York, Nelson Associates, Inc., p. 17.

26. Thomson, op. cit., p. 48.

27. Ibid., p. 72; Schmidt and Shaffer, op. cit., p. 203.

28. Thomson, op. cit., p. 65; A Study of the Characteristics, Costs, and Magnitudes..., p. 46; Palmour and Gray, op. cit., pp. 17-20, 23.

29. Thomson, op. cit., pp. 59-60.

30. Ibid., p. 64; A Study of the Characteristics, Costs, and Magnitudes..., p. 43; Interlibrary Loan in New York State, pp. 27-29; Schmidt and Shaffer, op. cit., p. 200.

31. Interlibrary Loan in New York State, pp. 114-118; Taylor, op. cit., p. 40.

32. Thomson, op. cit., pp. 65-66.

33. Ibid., pp. 66-72; A Study of the Characteristics, Costs, and Magnitudes..., pp. 42-43; Interlibrary Loan in New York State, pp. 27-29; Schmidt and Shaffer, op. cit., p. 202

34. Schwegmann, George A. "Some Speculations on the Future of Interlibrary Loan," Special Libraries, 55:216-220, April 1964; Kaser, David. "Whither Interlibrary Loan?" College and Research Libraries, 33:398-402, Sept. 1972; A Study of the Characteristics, Costs, and Magnitudes..., pp. 5-6.

35. Thomson, op. cit., pp. 5-6.

36. A Study of the Characteristics, Costs, and Magnitudes..., p. 37.

37. Thomson, op. cit., pp. 48-54, 59-60.

38. Kaser, op. cit.; American Libraries, 4:241, April 1973.

39. A Study of the Characteristics, Costs, and Magnitudes..., pp. 19, 22.

Appendix A

Bibliography of Books and Papers

1. Prospects and the Future of Interlibrary Loan

Schwegmann, George A. "Some Speculations on the Future of Interlibrary Loan," Special Libraries 55:216-220 (April, 1964).

"Position Statement of the Association of Research Libraries on the Model Interlibrary Loan Code for Regional, State, or Other Special Groups of Libraries," Association of Research Libraries, Minutes of the Seventy-third Meeting, January 26, 1969, pp. 42-45.

Jeffs, Joseph. "The Periodical Resources Center: a Lovely Unicorn," ARL, Minutes of the Seventy-eighth Meeting, May 14-15, 1971, pp. 64-69.

"Summary of Discussion of the ARL Interlibrary Loan Study and of Library Networks," Ibid., p. 90.

Helal, A. H. "Circulation, Recording and Control of Interlibrary Loans," Libri 21:274-283 (1971).

"A National Program for the Association of Research Libraries," ARL, Minutes of the Seventy-ninth Meeting, Chicago, January 22, 1972. Rutherford Rogers, "National Centers of Resource Excellence," and Joseph Jeffs, "A National Periodicals Resources Center," pp. 5-8 and appendices A and B, pp. 38-42.

"Cooperation, a Mini-Symposium with Richard M. Dougherty." Commentary by Ralph Blasingame and others. Library Journal 97:1767-1776 (15 May 1972).

Kaser, David. "Whither Interlibrary Loan?" College and Research Libraries 33:398-402 (September 1972).

Hayes, R. M. "SILC: A System for Inter-library Communication - Preliminary Specifications," Unpublished report for Association of Research Libraries, 1 January 1973.

2. General Studies of Interlibrary Loan

Thomson, Sarah K. Interlibrary Loan Involving Academic Libraries. (ACRL Monograph no. 32) Chicago, ALA, 1970.

Palmour, Vernon, and others. A Study of the Characteristics, Costs, and Magnitude of Interlibrary Loans in Academic Libraries. Westport, Conn., Greenwood, 1972. (The Westat study)

3. Studies of Individual Interlibrary Loan Systems

National Agricultural Libraries Network: Policy Statement. Revised. Bethesda, Maryland, National Agricultural Library, February, 1972.

Parker, Wyman W. "The Network Concept: CONVAL," Connecticut Libraries 12:11-12 (Fall, 1970).

Ellis, R. A., and Root, Nino. An Evaluation of the New York State Library's NYSILL Pilot Program. New York, Nelson Associates, 1968.

Interlibrary Loan in New York State. New York, Nelson Assoc., 1969.

NYSILL: New York State Interlibrary Loan, Evaluation, Phase III, 1969. New York, New York State Library, 1970.

New York State Interlibrary Loan Network: NYSILL Manual. Revised, May, 1970. The University of the State of New York, The State Education Department.

Rollins, J. G. "Research Library Resources via NYSILL, the New York State Interlibrary Loan Program, a Study of Phase IV, 1970-71," Bookmark 31:3-10 (September/October, 1971).

NIL: a Study of Unfilled Interlibrary Loan Requests in the NYSILL System. New York, Nelson Associates, 1970.

Judd, J. Van der Veer. "Interlibrary Loan Delivery Experiment," Bookmark, 31:11-14 (September/October, 1971).

Rationalizing Research Libraries in the 70's: Proceedings of a Symposium Sponsored by the Five Associated University Libraries, November 12, 1970. Syracuse, n. d.

Warner, Edward S. "A Tentative Analytical Approach to the Determination of Interlibrary Loan Network Effectiveness," College and Research Libraries 32:217-221 (May, 1971).

Neely, Eugene T. The North Carolina Catalog: an Examination and Evaluation. (University of Illinois, Graduate School of Library Science, Occasional Papers, no. 99) April, 1971.

Schmidt, C. James, and Shaffer, Kay. "A Cooperative Interlibrary Loan Service for the State-Assisted University Libraries in Ohio," College and Research Libraries 32:197-204 (May, 1971).

Guthrie, Gerry D., "An On-Line Remote Catalog Access and Circulation Control System," (revised 12/14/71). Unpublished report. Columbus, Ohio, The Ohio State University Libraries.

Weech, Terry L. "The Illinois Research and Reference Center Program: an Evaluation." Unpublished. Urbana, University of Illinois, Library Research Center, August, 1968.

Palmour, Vernon E., and Gray, Lucy M. Costs and Effectiveness of Interlibrary Loan and Reference Activities of Resource Libraries in Illinois. Springfield, Illinois State Library, 1972.

MINITEX. (Minnesota Interlibrary Teletype Experiment) 1969-1970; a Report on a Pilot Demonstration Project. Minneapolis, University of Minnesota Libraries, September, 1970.

Southern Methodist University. Final Report of an Inter-network Study Demonstration and Pilot Model. Dallas, Southern Methodist University, 1971.

Posner, Walter. "Interlibrary Loans at the University of Denver, 1961-1962," Library Resources and Technical Services 7:286-293 (Summer, 1963).

Casey, Genevieve. The Future Role and Financial Structure of the Bibliographic Center for Research, Rocky Mountain Region; a Reconnaisance Study. (Wayne State University, Office of Urban Library Research, Research Report no. 6) Detroit, September, 1969.

Becker, Joseph, and Hayes, Robert M. A Proposed Library Network for Washington State. Washington State Library, September, 1967.

Currier, Lura G. Sharing Resources in the Pacific Northwest; a Study of PNBC and Interlibrary Loan. Olympia, Washington State Library, 1969.

Reynolds, Maryan, and others. A Study of Library Network Alternatives for the State of Washington, chapter 2, "Interlibrary Loans." Olympia, Washington State Library, January, 1971.

Taylor, David W., and others. An Operations Research Study of the Pacific Northwest Bibliographic Center. Washington, D. C., U. S. Office of Education, 1972.

Final Report of a Library Inter-Network Study Demonstration and Pilot Model...Prepared by Maryann Duggan, Principal Investigator, September 15, 1969, revised June 17, 1971. Southern Methodist University, 1971.

4. The British System and Other European ILL Systems

Sylvestre, Guy. "The Developing National Library Network of Canada," Library Resources and Technical Services 16:48-60 (Winter, 1972).

Great Britain. Department of Education and Science. Report of the National Libraries Committee. London, H. M. Stationery Office, 1969. (The Dainton report)

Line, Maurice B. "The Developing National Library Network in Great Britain," Library Resources and Technical Services, 16:61-73 (Winter, 1972).

Line, Maurice B. "Interlibrary Lending in the Social Sciences: a Note," ASLIB Proceedings 24:445-448 (August, 1972).

Schieber, William D. Technical Manual on ISIS (Integrated Scientific Information System). Stockholm, 1972.

Rosquist, Lennart. "LIBRIS: a Library Information System for Swedish Libraries." Unpublished. Stockholm, Swedish Agency for Administrative Development, 15 July 1971.

5. Studies on Specific Aspects of Interlibrary Loan

"Interlibrary Loan Costs Studied," Kansas Library Bulletin 38:5-7 (Summer, 1969).

Spencer, Carol C. "Unit Costs of Interlibrary Loans and Photocopies at a Regional Medical Library: Preliminary Report," Medical Library Association Bulletin 58:189-190 (April, 1970).

Llewellyn, Gene M., and Allen, Kenneth S. "Interlibrary Loan Costing," PNLA Quarterly 35:9-15 (Summer, 1971).

Manning, Josephine. "Facsimile Transmission: Problems and Potential," Library Journal 93:4102-4104 (1 November 1968).

Hammer, Donald P. "Problems in the Conversion of Bibliographic Data--a Keypunching Experiment," American Documentation 19:12-17 (January 1968).

Bourne, Charles P., and Kasson, Madeleine S. Preliminary Report on the Review and Development of Standard Cost Data for Selected Library Technical Processing Functions. Palo Alto, Calif., Information General Corp., 1969.

Bregzis, Ritvars. Machine Readable Bibliographic Records: Criteria and Creation. (ERIC/CLIS Review Series, no. 4) 1970.

6. Theory

Meise, N. R. Conceptual Design of an Automated National Library System. Scarecrow, 1969.

Becker, Joseph, ed. Proceedings of the Conference on Interlibrary Communications and Information Networks... Chicago, ALA, 1971.

Blackburn, R. H. "Of Mice and Lions and Battleships and Interlibrary Things," IPLO (Institute of Professional Librarians of Ontario) Quarterly 13:68-79 (October 1971).

The Carnegie Commission on Higher Education. The Fourth Revolution: Instructional Technology in Higher Education. McGraw-Hill, June, 1972.

Korfhage, R. R., and others. Graph Models for Library Information Networks," Library Quarterly 42:31-42 (January 1972).

Harary, Frank. Graph Theory. Reading, Mass., Addison-Wesley, 1969.

Thompson, W. W. Operations Research Techniques. Columbus, Ohio, Merrill, 1967.

7. Miscellaneous

Downs, Robert B. University Library Statistics. Association of Research Libraries, 1969.

Karlson, Marjorie E. "Interlibrary Loan: the New Code," RQ 10:33-38 (Fall, 1970).

Mitchell, P. M. "The Scholar and the Library," in University and Research Libraries in Japan and the United States, ed. by Thomas Buckman and others. Chicago, ALA, 1972, pp. 35-49.

The following report was not examined and was brought to the investigator's knowledge too late to be included in the bibliography in section 4, but is believed to have relevance to the present study.

Line, Maurice B. The Scope for Automatic Data Processing in The British Library; Report of a Study into the Feasibility of Applying ADP to the Operation and Services of The British Library. London, HMSO, c. 1972. 2 vol.

Appendix B

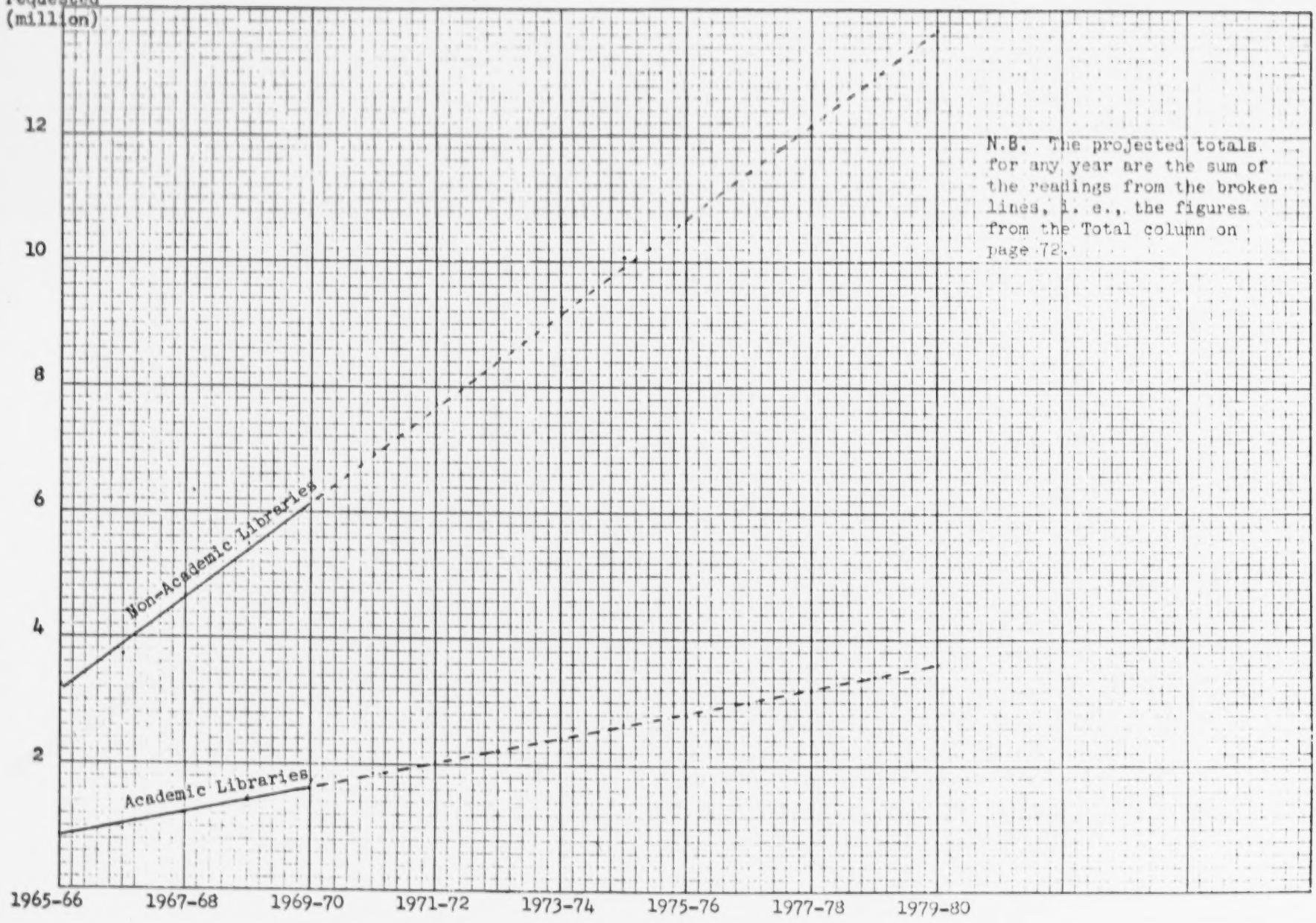
Items Requested from all Types of Libraries, 1965-1980*
(Thousands)

Year	Academic Libraries*	Non-academic Libraries**	Total
1965-66	859	3,264	4,123
1966-67	984	3,741	4,725
1967-68	1,230	4,674	5,904
1968-69	1,446	5,495	6,941
1969-70	1,754	6,665	8,419
1970-71	1,832	6,962	8,794
1971-72	2,034	7,729	9,763
1972-73	2,224	8,451	10,675
1973-74	2,435	9.253	11,688
1974-75	2,646	10,055	12,701
1975-76	2,800	10,640	13,440
1976-77	3,000	11,400	14,400
1977-78	3,200	12,160	15,360
1978-79	3,400	12,920	16,320
1979-80	3,600	13,680	17,280

* Data for academic libraries, 1965-66 to 1974-75 from A Study of the Characteristics, Costs, and Magnitude of Inter-library Loans in Academic Libraries, p. 51.

** Data for non-academic libraries obtained by multiplying column one by 3.8.

Magnitude of Requests from All Types of Libraries, 1965-1980



N.B. The projected totals for any year are the sum of the readings from the broken lines, i. e., the figures from the Total column on page 72.

Appendix C

Interlibrary Loan Centers Visited and Persons Interviewed

Interlibrary Loan Centers

NYSILL, New York State Library, Albany, N. Y., February 1, 1973
Ohio Colleges Library Center, Columbus, Ohio, January 8, 1973
The Ohio State University Libraries, January 7-8, 1973
University of Illinois, Urbana, Illinois, various times

Persons Interviewed

Cornell University
David Kaser

Library of Congress
Legare Obear

National Agricultural Library
Wallace Olsen

New York State Library
Mary Felix
Robert Stewart
E. J. Josey
Jane Rollins
Van Judd

Ohio Colleges Library Center
Frederic Kilgour

The Ohio State University Libraries
Hugh Atkinson
Jane Gatliffe
Gerry Guthrie
Betty Meyer

University of Colorado
Virginia Boucher

University of Illinois
Elaine Albright
William Garton
Robert Kidder
Charles Knudson, Professor
Martha Landis
Phillip Mitchell, Professor
Robert Oram
Lucien White